

Amendment and Response

Applicant: Charlie Steinmetz et al.

Serial No.: 10/768,412

Filed: January 29, 2004

Docket No.: 200209323-1

Title: PRINTING-FLUID CONTAINER

IN THE CLAIMS

Please add claims 42-45.

Please amend claims 1, 3, 12, 33, 34, 38, and 41 as follows:

1. (Currently Amended) A printing-fluid container, comprising:
an off-axis printing-fluid reservoir configured to hold a free volume of printing fluid and air mixed together therein, the printing-fluid reservoir having a substantially planar planar leading surface;
a printing-fluid interface ~~recessed into~~ on the leading surface and extending into the reservoir and configured to ~~move printing fluid into and out of the printing-fluid reservoir~~ provide bi-directional flow and move printing fluid out of and return printing fluid to the printing-fluid reservoir; and
an air-interface ~~recessed into~~ on the leading surface and extending into the reservoir and configured to ~~move air into and out of the printing-fluid reservoir as the printing fluid is moved into and out of the reservoir~~ provide bi-directional flow and move air into the printing-fluid reservoir as printing fluid is moved out of the reservoir through the printing-fluid interface, and move air out of the printing-fluid reservoir as printing fluid is returned to the reservoir through the printing-fluid interface.
2. (Cancelled)
3. (Currently Amended) The printing-fluid container of claim 1, wherein the leading surface of the printing-fluid reservoir is ~~an upright surface~~ configured for lateral insertion into a printing system.
- 4-6. (Cancelled)
7. (Original) The printing-fluid container of claim 1, wherein the printing-fluid interface is configured to laterally input and output the printing fluid.

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8. (Original) The printing-fluid container of claim 1, wherein the air-interface is configured to laterally input and output the air.
9. (Original) The printing-fluid container of claim 1, wherein the printing-fluid interface includes a ball and septum assembly.
10. (Original) The printing-fluid container of claim 1, wherein the air-interface includes a ball and septum assembly.
11. (Original) The printing fluid container of claim 1, wherein the printing-fluid interface and the air-interface are each respectively configured to conditionally block input and output of printing fluid and air unless engaged by a fluid connector.
12. (Currently Amended) A printing-fluid container, comprising:
an off-axis printing-fluid reservoir configured to hold a free volume of printing fluid and air mixed together therein, the printing-fluid reservoir having a leading surface configured for lateral insertion into a printing system;
a printing-fluid interface ~~recessed into~~ on the leading surface of the printing-fluid reservoir and extending into the reservoir, wherein the printing-fluid interface is configured to provide bi-directional flow and output printing fluid from the printing-fluid reservoir during a first mode of operation and ~~is configured to input printing fluid into~~ return printing fluid to the printing-fluid reservoir during a second mode of operation; and
an air-interface ~~recessed into~~ on the leading surface of the printing-fluid reservoir and extending into the reservoir, wherein the air-interface is configured to provide bi-directional flow and regulate pressure within the printing-fluid reservoir by inputting air into the printing-fluid reservoir as printing fluid is moved out of the printing-fluid reservoir through the printing-fluid interface during the first mode of operation and by outputting air from the printing-fluid reservoir as the printing fluid is input into the printing-fluid reservoir as printing fluid is returned to the printing-fluid reservoir through the printing-fluid interface during the second mode of operation.

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13-14. (Cancelled)

15. (Previously Presented) The printing-fluid container of claim 12, wherein the leading surface has a substantially planar profile.

16. (Previously Presented) The printing-fluid container of claim 12, wherein the air-interface is above the printing-fluid interface on the leading surface of the printing-fluid reservoir.

17. (Previously Presented) The printing-fluid container of claim 16, wherein the air-interface is vertically aligned above the printing-fluid interface on the leading surface of the printing-fluid reservoir.

18. (Previously Presented) The printing-fluid container of claim 12, wherein a single structural piece forms the leading surface.

19. (Original) The printing-fluid container of claim 12, wherein the printing-fluid interface is configured to laterally input and output the printing fluid.

20. (Original) The printing-fluid container of claim 12, wherein the air-interface is configured to laterally input and output the air.

21. (Original) The printing-fluid container of claim 12, wherein the air-interface is configured to regulate pressure within the printing-fluid reservoir to an operating pressure substantially equivalent to an ambient atmosphere pressure.

22. (Original) The printing-fluid container of claim 12, wherein the air-interface is configured to regulate pressure within the printing-fluid reservoir to an operating pressure above an ambient atmosphere pressure.

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23. (Original) The printing-fluid container of claim 12, wherein the air-interface is configured to regulate pressure within the printing-fluid reservoir to an operating pressure below an ambient atmosphere pressure.
24. (Original) The printing-fluid container of claim 12, wherein the air-interface actively regulates pressure within the printing-fluid reservoir.
25. (Original) The printing-fluid container of claim 12, wherein the air-interface passively regulates pressure within the printing-fluid reservoir.
26. (Original) The printing-fluid container of claim 12, wherein the printing-fluid interface includes a ball and septum assembly.
27. (Original) The printing-fluid container of claim 12, wherein the printing-fluid interface is configured to receive a fluid connector that is in fluid communication with a printing-fluid ejector upon installation of the printing-fluid container into a printing system.
28. (Original) The printing-fluid container of claim 27, wherein the printing-fluid interface is configured to deliver printing fluid to the printing-fluid ejector via the fluid connector during the first mode of operation.
29. (Original) The printing-fluid container of claim 12, wherein the air-interface includes a ball and septum assembly.
30. (Original) The printing-fluid container of claim 12, wherein the air-interface is configured to receive a fluid connector that is in fluid communication with a venting assembly upon installation of the printing-fluid container into a printing system.

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31. (Original) The printing-fluid container of claim 30, wherein the air-interface is configured to vent air to the venting assembly via the fluid connector during the second mode of operation.

32. (Original) The printing-fluid container of claim 12, wherein the printing-fluid interface and the air-interface are respectively configured to conditionally block input and output of printing fluid and air unless the printing-fluid interface is engaged by a fluid connector and the air-interface is engaged by a fluid connector.

33. (Currently Amended) A printing-fluid container, comprising:

an off-axis printing-fluid reservoir configured to hold a free volume of printing fluid and air mixed together therein;

a ball and septum printing-fluid interface on ~~an upright~~ a leading surface of the printing-fluid reservoir, wherein the printing-fluid interface is configured to provide bi-directional flow and output printing fluid from the printing-fluid reservoir during a first mode of operation and ~~is configured to input printing fluid into~~ return printing fluid to the printing-fluid reservoir during a second mode of operation; and

a ball and septum air-interface vertically aligned above the printing-fluid interface on the ~~upright~~ leading surface of the printing-fluid reservoir, wherein the air-interface is configured to provide bi-directional flow and regulate pressure within the printing-fluid reservoir by inputting air into the printing-fluid reservoir as printing fluid is moved out of the printing-fluid reservoir through the printing-fluid interface during the first mode of operation and by outputting air from the printing-fluid reservoir as the printing fluid is input into the printing-fluid reservoir as printing fluid is returned to the printing-fluid reservoir through the printing-fluid interface during the second mode of operation;

wherein the printing-fluid interface and the air-interface are configured to block input and output of printing fluid and air until the printing-fluid container is laterally installed into a printing system and a first fluid connector engages the printing-fluid interface and a second fluid connector engages the air-interface.

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34. (Currently Amended) The ~~printing-fluid-printing-fluid~~ container of claim 33, wherein a single structural piece forms the ~~upright~~-leading surface of the printing-fluid reservoir.

35-37. (Cancelled)

38. (Currently Amended) A method of supplying printing fluid, comprising:
storing a free volume of printing fluid and air mixed together in a reservoir having an air-interface configured to provide bi-directional flow and a printing-fluid interface configured to provide bi-directional flow;

allowing printing fluid to exit the reservoir through the printing-fluid interface and allowing air to enter the reservoir through the air-interface as printing fluid is moved out of the reservoir through the printing-fluid interface during a first mode of operation; and

allowing printing fluid to return to the reservoir through the printing-fluid interface and allowing air to exit the reservoir through the air-interface as the printing fluid is returned to the reservoir through the printing-fluid interface during a second mode of operation.

39. (Original) The method of claim 38, wherein allowing printing fluid to exit the reservoir includes laterally delivering printing fluid from the reservoir.

40. (Original) The method of claim 38, wherein allowing printing fluid to return to the reservoir includes laterally returning printing fluid to the reservoir.

41. (Currently Amended) The method of claim 38, wherein allowing printing fluid to return to the reservoir includes returning printing fluid and at least one of air and froth.

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42. (New) The printing-fluid container of claim 1, wherein the printing-fluid interface and the air-interface are both configured to provide bi-directional flow while the printing-fluid container is seated in a printing-fluid container bay.

43. (New) The printing-fluid container of claim 12, wherein the printing-fluid interface and the air-interface are both configured to provide bi-directional flow while the printing-fluid container is installed in the printing system.

44. (New) The printing-fluid container of claim 33, wherein the printing-fluid interface and the air-interface are both configured to provide bi-directional flow while the printing-fluid container is installed in a printing system.

45. (New) The method of claim 38, wherein the printing-fluid interface and the air-interface are both configured to provide bi-directional flow while the reservoir is installed in a printing system.